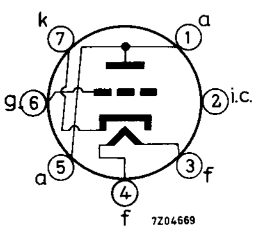
# S.Q. TUBE

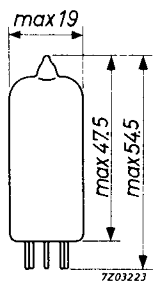
Triode designed for use as R.F. power amplifier or oscillator for frequencies up to 150 MHz.

| QUICK REFERENCE DATA | | | |
|---|---|---|---|
| Life test | 500 hours | | |
| Base | Miniature | | |
| Heating | Indirect<br>A.C. or D.C. | | |
| Heater voltage | $V_f$ | 6.3 | V |
| Heater current | $I_f$ | 150 | mA |
| Output power f = 50 MHz | $W_o$ | 3.6 | W |
| f = 100 MHz | $W_o$ | 3.3 | W |

**DIMENSIONS AND CONNECTIONS** Dimensions in mm

Base: Miniature



## CHARACTERISTICS

| | | | | |
|---|---|---|---|---|
| Heater voltage | $V_f$ | | 6.3 | V |
| Heater current | $I_f$ | | 150 | mA |
| Anode voltage | $V_a$ | 100 | 250 | V |
| Grid voltage | $-V_g$ | 0 | 8.5 | V |
| Anode current | $I_a$ | 11.8 | 10.5 | mA |
| Mutual conductance | S | 3.25 | 2.2 | mA/V |
| Amplification factor | $\mu$ | 21.5 | 17 | |
| Internal resistance | $R_i$ | 6.6 | 7.7 | kΩ |

## CAPACITANCES

| | | Without shield | With shield | |
|---|---|---|---|---|
| Anode to grid | $C_{ag}$ | 1.4 | 1.3 | pF |
| Grid to cathode and heater | $C_{a/kf}$ | 1.5 | 1.7 | pF |
| Anode to cathode and heater | $C_{g/kf}$ | 1.2 | 2.6 | pF |

## LIMITING VALUES (Design centre rating system)

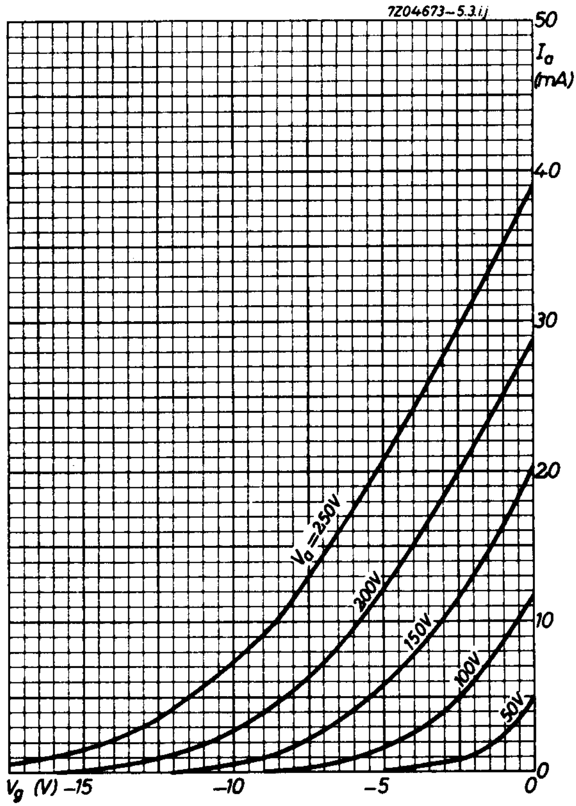
| | | | | |
|---|---|---|---|---|
| Anode voltage | $V_{a_o}$ | max. | 550 | V |
| | $V_a$ | max. | 300 | V |
| Anode dissipation | $W_a$ | max. | 3.5 | W |
| Cathode current: | | | | |
| (as R.F. oscillator or amplifier) | $I_k$ | max. | 30 | mA |
| (as R.F. doubler or trebler) | $I_k$ | max. | 20 | mA |
| Grid voltage | $-V_g$ | max. | 100 | V |
| Grid current | $+I_g$ | max. | 5.0 | mA |
| Grid resistor | $R_g$ | max. | 250 | kΩ |
| Voltage between cathode and heater | $V_{kf}$ | max. | 150 | V |
| Bulb temperature | $t_{bulb}$ | max. | 180 | $^oC$ |

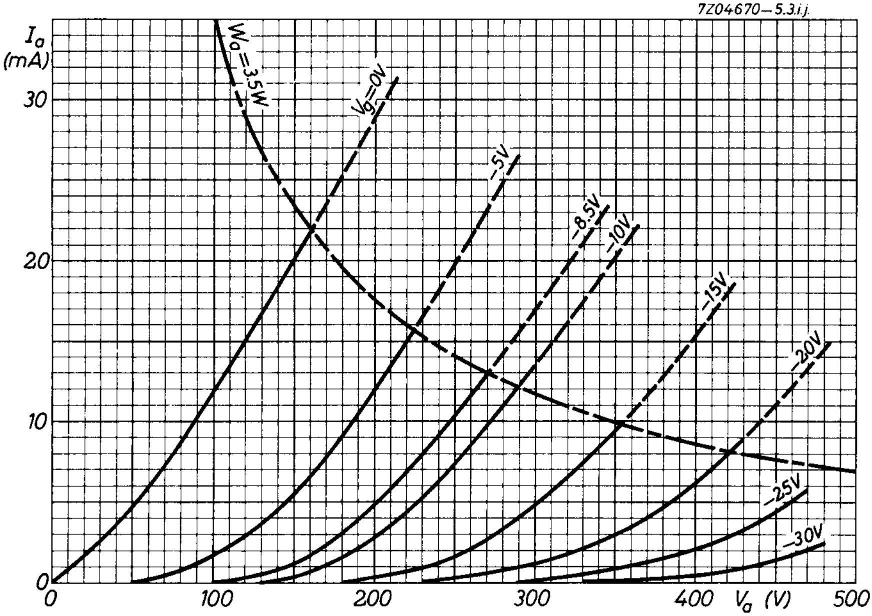
**OPERATING CHARACTERISTICS**

As R.F. amplifier or oscillator

Class C telegraphy or F.M.

| | | | | |
|---|---|---|---|---|
| Frequency | f | 50 | 100 | MHz |
| Anode voltage | $V_a$ | 300 | 300 | V |
| Grid voltage | $-V_g$ | 27 | 27 | V |
| Anode current | $I_a$ | 16.2 | 17.1 | mA |
| Grid current | $+I_g$ | 3.8 | 2.9 | mA |
| Output power | $W_o$ | 3.6 | 3.3 | W |
| Efficiency | $\eta$ | 67 | 55 | % |




7Z04670–5.3.i.j.
$I_a$ (mA)
30
20
10
0
0
100
200
300
400
$V_a$ (V)
500
$W_a$=3.5W
$V_g$=0V
–5V
–8.5V
–10V
–15V
–20V
–25V
–30V

PHILIPS

Data handbook

Electronic components and materials

**EC90**

| page | sheet | date |
|---|---|---|
| 1 | 1 | 1968.12 |
| 2 | 2 | 1968.12 |
| 3 | 3 | 1968.12 |
| 4 | 4 | 1968.12 |
| 5 | FP | 2001.04.13 |